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Original Articles

VESICO-RECTAL ANASTOMOSIS.*

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A SERIES of experiments has been conducted on the implantation of the ureters into the rectum, sufficient in number to justify the following conclusion, viz.:

That in every instance there is an ascending infection of the ureters, which terminates in the kidney. Since this is a proven fact, as verified by both a microscopic and macroscopic study of the dogs operated upon, I have every reason to believe that no better result could be attained in the human being, and from this circumstance alone the implantation of one or both ureters can never become popular. Various operators have devised different methods for the relief of exstrophy of the bladder, but Maydl's is to be preferred as the safest and best, because, according to his technique, the ureteral openings are not anatomically interfered with; hence a fortification against ascending infection.

Why should the ureters be cut away from a healthy bladder when it is possible for the viscus to be left, almost untouched, and still accomplish the desired results? As some of the lower animals and birds have the bladder and rectum as one cloaca the question arose, why cannot human beings live comfortably in the same condition? It is my object to place the unfortunate individual requiring this operation in the embryologic state, by combining the bladder and rectum into one common receptacle, from which the feces and the urine pass.

For the operation which I am about to describe, I have been unable to find any literature up to date, upon this subject. However, should any gentleman present be acquainted with any literature upon vesico-rectal anastomosis, I shall be thankful to be informed of it.

The operation consists of anastomosing the bladder to the rectum with my decalcified bone coupler, a description of which can be found in the *Medical Record*, October 3, 1896; the *Journal of the American Medical Association*, June 19, 1897; and in *Medicine*, January, 1897. The technic is as follows: In a male dog the incision is made in the groin, and in a bitch in the median line. Generally the bladder is found distended, and is emptied by squeezing it gently with the hand, when the urine escapes through the natural channel. The rectum is next picked up and freed of its contents, as in any intestinal operation. The bladder and rectum are then brought forward and placed in position for anastomosis. Two or three interrupted Lembert sutures are now taken about half an inch below the lower ends of the incisions determined upon in the bladder and rectum, care being exercised in selecting them that the coupler, when it is inserted, will not encroach upon the ureteral openings. A longitudinal incision is then made in the bladder large enough for the coupler selected, and a puckering string applied over and over the cut margin. The rectum is next opened in its long axis and a puckering string similarly applied. The suture should be taken so that the free ends lie uppermost, thus facilitating easy tying. The operator now slips the coupler into the bladder opening, at the same time gently spreading the collars apart, while an assistant makes one knot and draws down on the puckering string until the rubber tubing is felt; another knot is made and the ligature cut off short. The other half of the coupler is then slipped into the rectal opening and likewise tied and cut off. Several interrupted Lembert sutures are taken around the borders to make the work more secure. The operation is very simple and can be accomplished in ten or fifteen minutes.

The opportunity of trying this new method on the human being has not been afforded me to date, although it was tried on the cadaver and the technic carried out nicely. Of the fifteen dogs which were operated upon, ten recovered and five died. In the first two experiments the technic was not yet perfected and a great deal of unnecessary work was done, which undoubtedly contributed largely to the failures. As a rule, the dogs are quite sick for the first few days, and show signs of pain, with rise of temperature. For a week after the operation urine and feces are voided oftener than after this period. Dogs hoist their legs as though in the act of urinating, without accomplishing anything, and finally squat down and urinate from

*Read before the Mississippi Valley Medical Association, Chicago, October 4, 1899.

the rectum. The animals that have been kept accustomed themselves to their condition and urinate periodically. The feces were always passed in a liquid form, being softened by the urine.

It is my opinion that vesico-rectal anastomosis will not only become popular for exstrophy, but will be resorted to for other diseased conditions of the bladder, especially where a suprapubic or perineal section is merely performed for temporary relief. I predict that in the near future the journals will record cases of vesico-rectal anastomosis, in far greater numbers than gastroenterostomy performed as a relief measure for a diseased condition of the stomach. The field for vesico-rectal anastomosis is much larger than that for gastroenterostomy, and the results of the former operation will be more permanent than those of the latter. One great advantage that the human being will have over the lower animals is in irrigation, as the operated parts can be kept clean with antiseptic solutions at will, thus limiting the unavoidable but only temporary cystitis. Another point is that the human being is kept quiet on his back after the operation, hence feces are less liable to get into the bladder. The reverse is true in dogs. In exstrophy of the bladder the anastomosis should be made first and then the plastic operation later.

Two of the dogs which were operated upon about six months ago are alive, in good health, and apparently as happy as other dogs that urinate through the natural channel.

The result of the microscopic and bacteriologic study of vesico-rectal anastomosis is much more gratifying than that of implantation of the ureters into the rectum. The detailed account of such experiment has been omitted, as time would not permit the reading of it before this writing; it will be published later, when the last dog is killed.

Dr. Maximilian Herzog, Professor of Pathology in the Chicago Polyclinic, has made for me a number of post mortem examinations, including a bacteriologic and histologic study of the material obtained from several of the dogs operated upon by the above described method. He furnishes for this paper a short abstract of his detailed report, as follows:

The dogs were killed by chloroform narcosis at varying intervals after the operation. The body of the animal, as soon as life was extinct, was opened by a long median incision in which the scar in the abdominal wall was avoided. The kidneys were then carefully freed and lifted out, with as little manipulation as possible. The ureters were ligated close to the pelvis. The outside of the latter was rendered aseptic by a heated spatula; an extra strong platinum loop heated to a red-hot state was then pushed into the pelvis, kept there a few seconds and withdrawn. Inoculations from the fluid and juices so obtained were made on blood serum and glycerine agar tubes, which were subsequently kept in the brood-oven. Tissues from the kidneys and the site of the anastomosis were fixed in a 4 per cent. formalin solution, or in Zenker's fluid, embedded and stained according to various methods, including of course such for demonstrating bacteria.

Dog No. 4.—Operation May 6th, 1899; killed May 21, 1899. Four cultures made; three remained sterile. One cultured tube developed a growth, evidently an accidental contamination, neither the colon bacillus nor a staphylococcus. All internal organs normal. Anastomosis complete. Kidney tissue normal; no evidence of inflammation or degeneration.

Dog No. 8.—Dog found dead May 21, four days after the operation. Internal organs normal, except large struma colloidea. Macroscopic condition of kidneys, ureters and bladder does not point to a cause of death as a direct consequence of the operation.

Dog No. 9.—Operation May 21, 1899; developing several days after a paraphimosis and gangrene of the penis. Was found dead June 9, 1899. Kidney, ureters and bladder show microscopically no marked changes. All other internal organs normal. Anastomosis complete and firm. Microscopically kidneys normal, except as to one point: there was found in the medullary portion of the right kidney, near the pelvis, two small foci of round cell infiltration. Bacteria are not demonstrable anywhere in the renal tissues.

Dog No. 13.—Operated on June 1, 1899; killed June 28, 1899. Two culture tubes developed colon bacilli and diplococci. Kidneys and ureters macroscopically normal. Anastomosis complete and firm. Microscopic examination of the anastomosis shows that the intestinal epithelium has for a short distance grown over the surface of the bladder. Kidney tissue shows no appreciable histologic changes. There are, however, found a few micro-organisms, as follows: right kidney, in the tissue near the surface of the pelvis, bacilli and a few diplococci; likewise in the cortex, a few bacilli; left kidney, in medulla and cortex, a few bacilli.

Dog No. 15.—Operated on June 10, 1899; killed three months later, September 11, 1899. Dog suffering from the red mange. but appears otherwise well; right kidney and ureter normal. Left kidney congested; ureter enlarged to double its normal size. Anastomosis complete and firm; on one side of it are found adhesions of omentum and a loop of small intestine. Culture tubes develop colon bacilli. Microscopic examination of tissue shows a very intimate union at the site of anastomosis, with practically no connective tissue scar, the muscularis and that of the bladder being in the closest apposition. The tissues of both kidneys show inflammatory changes and contain colon bacilli.

A uniformly striking feature of the histologic

examination in all cases is the very complete and firm union of the vesical and rectal tissue at the site of the anastomosis.

From the above it will be noted that in only one experiment, No. 15, was there any macroscopic evidence of a change from the normal. If, then, the careful microscopic work had not been carried out in my series of experiments a complete recovery could be claimed in every instance, so far as the behavior of the dog prior to the post mortem, and to the appearance of the organs at the time of the post mortem, with but the exception already noted in experiment No. 15. I again repeat, that in all my experiments of ureteral implantation an infection of the kidney resulted, and this fact led me to devise the new operation.

From all the literature which I have been able to study on the subject of ureteral implantation few contain a microscopic report, and therefore are absolutely worthless as regards the subject of kidney infection.

From the report just finished two points will be observed: First, that the recovery of the dog and the macroscopic appearance of the tissues do not necessarily signify absence of infection. Second, in the dogs killed thus far, the operation of vesico-rectal anastomosis was performed without a resulting kidney infection.

SOME DIAGNOSTIC POINTS IN HEART DISEASES, ESPECIALLY IN INFANCY AND CHILDHOOD.*

By W. L. Johnson, St. Louis.

WHEN we consider the difficulties encountered in examining the young, we are not amazed at the heart lesions escaping the notice, at times, of physicians.

The remedy lies in making a thorough physical examination of the thorax at the first visit. This is not only helpful at the time but very necessary for subsequent reference; for a lesion discovered later gives rise to the question of its previous existence.

Congenital heart disease following fetal endocarditis or perversions of development are fairly common, stenosis of the pulmonary artery being the lesion most frequently encountered.

Cyanosis does not occur as a rule at once, but in several days or even weeks. Nor do we of necessity have a murmur. Dyspnea is usually present. The cyanosis of atelectasis is accompanied by defective expansion of the chest and certain regions, as the jugulum, epigastrium; and intercostal spaces are sunken. (Whittaker.) This is not so in the cyanosis of heart disease. The respiration, though hurried, is regular, and as a rule these infants are not asphyxiated at birth, as are those having atelectasis. Bronchial rales and a change in percussion note are occasionally demonstrable in the latter.

Holt thinks that lesions found in those under two years of age may be considered congenital. With this we cannot agree, having seen a case develop a murmur at six months of age.

Ordinarily, we have cyanosis with a systolic murmur at the base. Pulmonic stenosis, with deficient septum or patent ductus arteriosus, is the lesion this represents.

A systolic murmur at the base without cyanosis usually depends upon deficient ventricular septum without pulmonic stenosis, or upon tricuspid regurgitation. (Holt.)

This author says that enlargement of the right heart was found in 86.5 per cent., and in half these the left ventricle was enlarged, but rarely alone. Hochsinger, however, says hypertrophy is absent in congenital heart disease, owing to defects such as patent foramen ovale in cases of pulmonary stenosis, which neutralize the tendency to hypertrophy. Hochsinger, in giving a differential diagnosis between congenital and acquired murmurs, we take it, admits the occurrence of the latter under two years of age. He says acquired murmurs have a sameness, are soft-blowing murmurs in neighborhood of apex or over the ventricle, whereas murmurs of congenital origin are loud, musical, and heard all over the precordia and are most often systolic.

His four rules are as follows:

1. Murmurs with cyanosis and a loud second sound point to a congenital change in one of the venous orifices.

2. Murmurs over the manubruim with cyanosis point to persistent ductus arteriosus.

3. Clear heart sounds with cyanosis and a loud second sound point to a transposition of the large vessels.

4. Murmurs (not arising from the orifice) with a loud second sound point to a defect in the septum and a transposition of the large vessels. (Sajous' Annual, 1892.)

Dr. Saunders points out that an increase of cyanosis on crying indicates congenital heart disease, lessening of cyanosis on crying arguing against it.

Club-shaped fingers, blue nails, and a cool skin are a trio of diagnostic value.

Functional heart disease is not common in early childhood, and we therefore pass on to a consideration of organic lesions. A study of causes must help in diagnosis. They are generally divided into (*a*) mechanical, (*b*) inflammatory. The mechanical are divided into primary and secondary. Exertion as primary; pleuritic or pericardial adhesions, kidney disease, pertussis as secondary mechanical causes are valuable hints, and particularly pertussis in the experience of the writer. A history of some in-

*Read before Bethesda Pediatrics Society, Sept. 8, 1899.

flammatory trouble, as pneumonia, scarlet fever, recurrent endocarditis, and above all rheumatism, suggests a careful study of the heart, as does the history of some associated diseases, chorea and tonsillitis for example.

The time of puberty should be considered.

Symptoms.—Of the general symptoms, shortness of breath, precordial pain, palpitation, edema, cough—all, while suggestive, are not diagnostic, since they occur in other diseases.

Physical signs then are practically our reliance.

It would be of no value to recite different methods, technique, and details of this art. We desire, however, to mention "stethoscopic percussion." Dr. Zoharsky and the writer have practiced this for some weeks, and find it of distinct value, particularly in determining the right border of the heart. We have with our eyes closed verified each other's outlines in almost every case.

Closure of the eyes is good, especially for the beginner, so that a knowledge of where the boundaries ought to be may not influence one's perception of change of note. We place the bell of the stethoscope over the superficial cardiac area, and percuss with mediate percussion, although Dr. Zahorsky has frequently used immediate percussion, holding the bell of the stethoscope with the other hand.

To determine then if a heart is hypertrophied or dilated, we must know the normal as it occurs in children.

According to Sahli (Holt) the area of relative dullness in infancy and childhood is second interspace or lower border of second costal cartilage.

To the right it is bounded by the parasternal line (a line midway between the edge of the sternum and the mammary line). The left border is slightly beyond the mammary line.

To see how nearly this could be verified, Dr. Zahorsky and the writer examined seven apparently normal infants.

1. Baby Willard, age one year; upper border center second interspace. Left: Three-fourths inch left of mammary line. Right: One-fourth inch to right of right margin sternum; width, $3\frac{1}{8}$ inches.

2. Baby John, age one year; upper border third rib, $\frac{1}{2}$ inch to inner side of nipple line; right, parasternal line, width, $3\frac{1}{4}$. Notice the first had left border, $\frac{3}{4}$ inch to left of mammary line, whereas the latter was $\frac{1}{4}$ inch internal to mammary line.

This was compensated for, however, by the second reaching the parasternal line on right side, whereas the first was but very little beyond edge of sternum.

This should emphasize the value of taking into consideration the width, and not concluding that the first baby had a dilated heart until the right border is determined, and in the determination of this right border lies the value of auscultatory or "stethoscopic percussion."

Name.	Age.	Upper Border.	Left Border.	Right Border.	Width dullness	
Willard	8 mos.	2nd intersp	$\frac{3}{4}$ in. to left of mam. line	$\frac{1}{4}$ in. to right of sternal margin	$3\frac{1}{8}$ in	
John	18 mos.	Upper border 3d cost. cart.	$\frac{1}{2}$ in. to right of left mam. line	Parasternal line	$3\frac{1}{4}$ "	
Earl	20 mos.	2nd intersp	Mam. line	$\frac{1}{2}$ in. to right sternal margin	$3\frac{1}{2}$ "	
Norman	14 mos.	3rd intersp	$\frac{3}{4}$ in. to left mam. line	Parasternal line	$4\frac{1}{4}$ "	Long transv. axis
Paul	24 mos.	Upper border 3d cost cart	$\frac{1}{4}$ in. to left mam. line	$\frac{1}{4}$ in. to left of right parasternal line	$3\frac{3}{4}$ "	
Billie	21 mos.	Upper border 3d cost. cart.	Mam. line	$\frac{1}{4}$ in. to left of right parasternal line	$3\frac{5}{8}$ "	
Ida	16 mos.	2nd intersp	$\frac{1}{2}$ in. to left mam. line	$\frac{1}{8}$ in. to left of right parasternal line	$3\frac{3}{8}$ "	

The superior area of absolute dullness extends to the upper border of third intercostal space. Left: midway between mammary line and parasternal line. Right: left border of sternum.

Apex beat is found outside the nipple line until fourth year, then on or near mammary line till ninth year.

It may be well to call attention to some sources of error in auscultation. First, extra-cardiac murmurs. Of these the cardio-pulmonary murmurs are most frequently heard. It was thought by having patient hold the breath certain murmurs of this class could be suppressed. This is not so; but frequently they may be obliterated by having patient exhaust the air as far as possible by blowing out the breath. Moreover, they are intensified at time of respiration, especially during inspiration, and by careful attention this may be appreciated. They are recognized by their seat, rhythm and mutability.

1. These murmurs are not heard exactly at the apex, but to the right and to the left at the level of the apex, say from $\frac{1}{2}$ to $1\frac{1}{2}$ inches to either side and over the ventricle. 2. Rhythm: a cardio-pulmonary murmur does not replace the first sound. A valvular flap is heard, and the murmur is observed to occur subsequently (Potain). 3. This murmur is intensified by the recumbent position. Potain maintains that if the change from the recumbent to the erect position is followed by complete or almost complete disappearance of the murmur it can be considered extra-cardiac.

Pericardial friction rubs are confusing. Their superficial character, restriction to pericardial space, their point of maximum intensity being at junction

of fourth rib with sternum, and being markedly louder on sitting than on lying down and being independent of valvular sounds, are distinguishing features.

Marked accentuation of the heart sounds, and the sound produced by a strong heart striking the chest wall, have, especially in children, been taken for *bona fide* murmurs. Here the conception of what constitutes a murmur is determined.

A few points now on the separate lesions, no attempt being made to review all diagnostic features and signs.

Holt gives 28 cases of aortic stenosis out of a total of 185 heart cases; of these only three were single. Although rare, its importance is manifest when we remember it is a source of confusion to differentiate functional from organic aortic stenotic murmurs. In the organic a thrill may be felt at the base, especially if the heart is working hard. Sometimes this thrill may be felt in the large vessels of the neck. The heart is enlarged. In anemic murmurs there is no thrill, anemia is evident and there is a venous hum. This hum may be heard in the jugular veins, particularly the right. It is a persistent sound, and likened to the "hum" of a shell. It is heard best standing, and on deep inspiration may even be felt. The anemic murmur is much augmented in the recumbent position, not so the organic in question. Moreover, anemic murmurs vary greatly from day to day in children.

In aortic stenosis, as in aortic insufficiency, the second sound of the heart is not heard in the carotids. It is heard in the anemic. The "carpenter's murmur" of Richardson has been heard in children as well as in carpenters and hard workers. It is a systolic murmur, heard over the subclavius, principally the left. These are occasionally loud and musical. Their limitation, as defined by the stethoscope, should mark them as not stenotic of the orifice.

Sewall, of Denver (quoted by Albutt), says that murmurs of aortic stenosis audible at the apex disappear under pressure by the stethoscope and in this differ from mitral regurgitation.

He says, moreover, that inorganic murmurs at the base may all be obliterated by pressure.

Aortic insufficiency occurred only nine times in the 185 cases and not at all as a separate lesion. The second sound in the carotids may be lost, and Sewall claims that the murmuring aortic regurgitation may be obliterated by pressure at the base, but not at the apex.

Pulsating tonsils and pillars of the fauces have been noted.

Mitral stenosis occurred seventeen times and only in four cases was it the only lesion. It is frequently necessary to slow the heart with digitalis to be positive in children as to whether a murmur is systolic or presystolic. More particularly since it is now conceded that stenotic mitral murmurs are sometimes audible posteriorly—Janeway says in one-third of the cases (*Medical News*, August 26, 1899); Sansom, in Albutt, is also authority, and in two cases seen with Dr. Zahorsky, in which our diagnosis was mitral stenosis, we heard the murmur a little above angle of scapula near the vertebral column on left side.

There is at times a reduplication of second sound, called "postman's knock," which is indicative of mitral stenosis, and is said to be at either the apex or base in over one-third of the cases. A systolic murmur having the character of mitral insufficiency is sometimes heard in later stages (Sansom in Albutt). Janeway, in the recent article quoted above, notes the same.

Children having mitral stenosis are emaciated, "consumptive looking," ribs stand out, and precordia is often prominent; intercostal spaces sunken.

Popoff (Sajous, 1893) observes a difference in the radial, the left being weaker than the right, due to pressure of the greatly dilated and hypertrophied right ventricle against the portion of the aorta from which the left subclavian artery arises.

Some Points of General Interest.—The recumbent position, arms over head and feet against buttocks, favors hearing of a murmur. In some cases it may be necessary and practical to resort to intrathoracic ausculation, as practiced by Richardson and Hoffman.

Subcutaneous nodules, especially over olecranon or condyles of humerus or the edges of the patella, in the scalp over the occipital bone, or an exudative erythema, are not only suggestive of heart disease, but argue, if one or the other exists, an unfavorable case. These nodules are the size of a split pea; the skin over them is freely movable and they may best be disclosed by flexing the joints. Exudative erythema is described as small, red patches, with sharply defined margins, and of a dull red color; the center of the patch may show indication of absorption, while the margin continues to spread. A rise of temperature exists, subsides in a few days, and a brown discoloration succeeds the erythema.

Broadbent warns against mistaking the recession of intercostal spaces, due to atmospheric pressure, for adherent pericardium.

The sign of Pin is a valuable one, and, as we understand it, is the disappearance of an otherwise misleading area of dullness posteriorly and to the left, by the patient assuming the knee-chest position. It indicates pericardial effusion, though a thickening of the pericardium may produce it.

Rotch is credited with the observation that the first evidence of pericardial effusion is found in the cardiohepatic angle, an angle obtainable by percussion of lateral heart dullness and superior liver dullness.

AN ARM SAVED AFTER BEING RUN OVER AND CRUSHED BY A RAILWAY LOCOMOTIVE.*

BY S. L. KILMER, M.D., South Bend, Ind.

BY WAY of introduction, permit me to say that the following case is not reported in consequence of its being in any sense new or remarkable, or as indicating any unusual skill, but because it shows what can be done by care and patience in cases that may at times seem almost hopeless in the matter of saving useful and serviceable limbs, and thus adding much to the comfort and happiness of the individual, and his usefulness to the public, and reflecting credit upon the medical profession. It is of course always much easier and simpler to perform an operation of amputation of a severely injured limb than to save it, and the surgeon is much sooner through with his patient; but the patient is not so fortunate in being through with his affliction when thus maimed for life; for, unfortunately, when a limb is once removed by the surgeon it remains off forever, and no other comes to take its place. I contend, much as we esteem the ability of rapid and skillful, as well as successful amputations and operations generally, such ability is not so powerful an argument in favor of the general qualifications of a surgeon as will be demonstrated by saving, in a useful condition, a limb so seriously crushed as to appear hopeless. I admit that it requires greater knowledge and more self-assurance to decide in favor of attempting to save a mangled limb than is required for its removal by amputation. It is the surgeon's duty to be possessed of judgment and discretion, indicating when to withhold his hand, as much as it is his duty to perform operations skillfully and dexterously. If the surgeon will put himself in his patient's place, and then consider what he would wish to have done in his own case, simply observing the Golden Rule, he will not make frequent errors in this respect.

I am aware of the fact that some will say a stump is better than a deformed and useless member, and to this I assent; but not all deformed members are useless, nor are all useless members deformed. The question of serviceableness depends upon their usefulness, and not on their perfection of form, or deformity. The mere fact that at some time a surgeon has succeeded in saving a limb or extremity which afterwards proved useless to its possessor, should not cause him afterwards, when in doubt, always to amputate. I boldly assert, but without of course the opportunity of demonstration, that for every case of a useless member saved by conservative surgery, a score or more have been amputated which might by proper care and attention have been saved, to the great and lasting benefit of the possessor. The ease with which an amputation can be performed; the effect it has upon an unthinking public as an indication of skill on the part of the operator, thus tending to enhance his reputation; the flattering reports in many, if not most, localities by the daily press, all conduce to operating and amputating without discretion or consideration or discrimination. Thus, in time, there is a hardening of heart, and an involuntary amputating instinct formed by the surgeon to such an extent that all that comes to his mill is amputating grist, and he runs in a single narrow channel or rut, which causes him to overlook entirely the grandest portion of his duties, viz.: not only to preserve life, but so to preserve the life and functions of an individual as to make him the most useful to himself, his family and the public.

The title of this article may be thoughtlessly considered as a misnomer, the forearm being crushed, but the crushing was practically of the *entire* forearm. When we consider the usual rule always to cut away the injured tissue in railway injuries, we will see that to follow this rule in amputation of a case of this kind we would necessarily sacrifice the entire arm. It will be observed that the general tone of the article is a plea in favor of conservatism. Now to the case in question.

About three o'clock in the morning of October 26, 1897, I was called to attend Mr. Geo. Blue, American, age 27, height 5 feet 6 inches, weight 130 pounds, a yard switchman in the employ of the Lake Shore and Michigan Southern Railway, at South Bend, Ind., who, in turning to step from the foot-board of the engine, slipped on the frost and fell in front of the engine, which at that moment started. The engine, in running over him, dragged him for some distance. Perhaps he caught hold of some part of the engine to protect himself, but in any event he was dragged over the ties for some thirty or forty feet. His left forearm lay across the rail and one or more of the wheels of the engine ran squarely over it, crushing the bones into short lengths and fragments, and mangling and crushing the soft tissues in the frightful manner usual in such cases. There was also a scalp wound of some four inches in length, extending to the skull. After a primary examination, he was removed to the Epworth Hospital; there, assisted by Dr. C. Stoltz, I made a more careful examination of his arm, and found the above description not in the least exaggerated. My first impulse was of course to amputate the arm above the elbow, as being the proper course to pursue in consequence of the terribly mangled condition of the entire forearm. However, I remembered having read, not long prior, the results of a German surgeon who had for some time made a specialty of endeavoring to avoid amputations in all cases where it was possible to do so, leaving, practically speaking, amputations to nature, under the opinion that nature was more conservative than art as practiced by the

*Read at the Twenty-fifth Annual Meeting of The Mississippi Valley Medical Association, Chicago, Oct. 5, 1899.

surgeon, and a better judge of the actual requirements than he; his method being simply to assist nature when it was evident that she was performing an amputation; and thus to ascertain whether it were not possible to save many cases which, under the usual practice, had been sacrificed. His success had been so marvelous as even to astonish himself, saving many limbs that appeared hopeless, and of many others saving a generous portion of the limb, to the great benefit of the patient.

Having myself always been given to the practice of conservative surgery, although on a smaller scale, by means of which I had been enabled to save many entirely useful members, even without loss of motion in the joints which had been opened by accident or in the operation, I was the more easily inclined to believe that it would be perhaps justifiable to make the effort in this case to save the arm, despite its almost hopeless outlook, inasmuch as the arteries had fortunately escaped severing, as indicated by their continued pulsation. It was feared, however, their injury might cause them to slough and thus bring on secondary hemorrhage.

The decision being made, I enlarged by incision one of the openings from which protruded bones and mangled flesh sufficiently to enable me to examine with the fingers carefully the entire interior. I removed with scissors a large amount of comminuted soft tissue; one section of the radius, $2\frac{3}{4}$ inches in length, which was entirely free from the soft tissues, was also removed, together with a number of fragments of bones of various sizes. A portion of the ulna, $2\frac{1}{4}$ inches in length, being still attached to some of the soft tissues, was permitted to remain with the hope that it might perhaps receive a sufficient amount of nourishment to protect its vitality.

After having thoroughly irrigated the vast cavity within the forearm and trimmed off as much as possible everything that was beyond the possibility of reparative process, drainage being provided for, and the fragments of bone replaced in as natural a position as possible, the arm was extended and laid upon a straight posterior board-splint, extending from the axilla beyond the finger-tips, carefully packed in a gauze dressing and light bandages applied. Strict asepsis was of course out of the question in this case, but the general principles of antiseptic treatment were complied with as closely as possible under the circumstances.

The next day there was, as was to be expected, a great deal of tumefaction, the swelling extending well up to the axilla; the skin over the forearm, and extending some distance above the elbow, much discolored, almost black, while the temperature was 101° F. On the following day the condition was worse, and I began to fear that a great error had been made in the attempt to save the arm. However, the condition remained, practically speaking, stationary for several days, and then began a profuse purulent discharge. There were large formations of pus at various places between the elbow and wrist; in fact there was a generally suppurating condition of the entire forearm, necessitating the free use of the lance so that the whole forearm resembled a sieve or a bag; upon irrigating with some little force the fluid would discharge from half a dozen different openings.

After a few weeks a splint was constructed composed of longitudinal iron bars, curved so as to allow free access to the opening in the forearm, and at the ends of the bars leather straps and buckles by which the splint was held in position, the bones being again arranged as correctly as possible and free drainage provided for; the limb could thus be handled and dressed without the removal of the splint. The discharge was very free for a period of probably two months, necessitating a change of dressing twice a day. Eventually, however, the swelling subsided greatly and the discharge diminished, and the general appearance of the arm improved. About this time he left the hospital for his home, coming to my office every day or two for treatment for several months longer. There was still a considerable discharge and it was evident there was some necrosed bone remaining, and on the 9th day of May, 1898, again assisted by Dr. Stoltz, I made an opening on the anterior or palmar surface of the forearm near the wrist and the portion of the ulna referred to above, as being left in the hope that it would survive. The entire diameter of the shaft of the ulna and $2\frac{1}{4}$ inches in length was easily removed, being found lying in a cavity of its own entirely freed from all other tissue, and dead.

The periosteum had unfortunately failed to produce new bone as was hoped, and apparently the contraction of the muscles had crowded out of position the portion of the necrosed ulna, approximating the extremities of the fragments of the bones between which there was a ligamentous union only. The wound was closed and speedily healed. The result is quite satisfactory, as the arm is quite useful, the patient having considerable power of flexion of the thumb and all of the fingers, which enables him to hold a book or other object in hand very comfortably. The ligamentous union, although quite short, unfortunately still permits the hand to droop, so that the arm becomes decidedly curved. This can, however, be corrected by wearing a splint for a few days which serves to correct the position of the bones, or did until some months since. There is, however, now a contraction of the muscles, a slipping of the extremities of the bones over each other, and a shortening of about three inches. The arm is entirely well at this time; that is to say, it is entirely healed and is painless. The ligamentous union and the natural weakness incident to the terrible injury to the soft tissues makes it of course a very imperfect arm, but it is in a very much better condition and much more serviceable than any artificial arm that

could have been put on the stump if it had been amputated.

An important matter for consideration in this case is the question of the advisability of freshening up the extremities of the bones and wiring them together in the hope of securing bony union; such result would doubtless add very much to the serviceableness of the arm; but should the effort result in failure, it is believed that it would interfere to a certain extent with its present usefulness.

The result is indeed very gratifying and demonstrates the justice of the attempt to save the arm, and I cannot refrain from the belief that very many limbs that are ordinarily sacrificed might be saved and made of more serviceability to their possessors by pursuing the course above indicated. It of course takes a long time and a great deal of service and very much worry to produce a result of this character in a case of this description. Perhaps in some cases attempts might be made that would eventually prove to have been illy advised and amputation might therefore become necessary. Still the results in this case have been so favorable, and my previous results from the practice of conservative surgery have also been so satisfactory, that I feel not only justified in continuing along the same lines, but I also feel that in many cases it would be reprehensible not to make the effort to save very seriously crushed members.

I am, of course, not to be understood as advocating the attempt to save all limbs that are crushed. There are many of them that it would be the greatest folly to make such an attempt upon, but if the results herein described can be produced in an arm crushed between the wheel of a railway locomotive and a solid T rail beneath it, it is reasonable to assume that favorable results may be produced in a goodly number of injured limbs that are ordinarily amputated because of a belief that it would be impossible to save them.

I know of no definite rule by which the surgeon's practice in this respect should be guided; much, indeed, must depend upon the wisdom and judgment of the surgeon; but, basing my opinion on the conditions and results in the case reported herein, I should say that whenever the arteries are left intact, providing a blood supply to the parts beyond the injury, it would be justifiable to make an effort to save the limb, however much the bones and soft tissues are crushed, especially so if the condition of the periosteum is such as to warrant the belief in its vitality and ability to restore new bone. The severed extremities of the muscles can sometimes be held in apposition by sutures. The loose fragments of bone may be removed, the remainder put into the best possible apposition, the limb thoroughly cleansed, laid in as natural a position as possible, kept clean and warm, and some dependence placed in nature, and she will produce results which will frequently astonish the surgeon by the way in which his art is excelled.

I have not mentioned the nerves, for the reason that their fibrous character generally protects them from laceration in doubtful cases, and even if a nerve is severed, it is entirely practicable to unite the severed extremities by suturing, with favorable anticipations of satisfactory results.

Lest there should be some doubting Thomas who would consider it impossible that a railway locomotive could thus pass squarely over an arm without crushing it beyond the power of nature with the surgeon's assistance to repair, and who would think, therefore, that an error had been made in the case here reported, pardon me for alluding to another case that occurred in my practice a few years ago, viz., April 21, 1897, in Mr. E. P., height 6 feet, weight 170 pounds, 28 years old, an employe of the same railway company, who, in blocking a car that had no brake, was caught by the slipping of the stone used for blocking; the wheel caught his fingers, ran over them and his hand and forearm to the elbow, and yet did not break a single bone. The force was so great and the shock so sudden that it caused him to turn a somersault. There was a violent wrench or sprain of the elbow joint, and also of the shoulder, but, as above stated, not a bone was broken—not even in his hand or fingers—although the soft tissues were badly swollen and discolored for some time.

This is, however, an exceptional case, occurring no doubt in an exceptional individual; exceptional, that is to say, from the standpoint of good fortune, as he has at another time since then quite recently, viz., July 13, 1899, again miraculously escaped serious or fatal injury. He was caught between the draw-bars of two cars, but instead of being cut in two, as is usual in such cases, he was apparently forcibly squeezed and rotated out of the very jaws of death, and, although laid up for several weeks from his injuries, he has now entirely recovered and is as well as ever.

While on the subject of conservatism, I hope to be pardoned by referring to one more case in which the usual rule for amputation excision was violated, and in which the result demonstrated the justice of the violalation. It is a confirmation of the correctness of the opinion and correctness of Reyher regarding gunshot wounds of the knee-joint. In brief, the case was as follows: Isaac James, station agent of the C. & G. T Railway, at Granger, Ind., on the 27th day of October, 1895, accidentally dropped from his hip pocket a large caliber revolver, which exploded, and the charge took effect upon his left knee, the ball entering on the inside of the joint, squarely between the femur and tibia, and passed directly through the joint, plowing its way through the articular surfaces of both bones and lodging under the skin at the outside of the knee. The wound was probed and strips of gauze drawn

through the course of the ball, removing thus a number of fragments of bone. After thorough irrigation, the limb was put up in a plaster case, and although the knee-joint was badly inflamed for several months, the inflammation eventually subsided, and he left the hospital in about three months after the injury with the limb almost well and with the joint so good that a few months later there was only a very slight limp perceptible in his walk, the motion of the joint being almost perfect.

Other cases might be cited, but the above are sufficient to demonstrate the justice of conservatism, in at least some cases that are generally considered outside of conservative boundaries.

THERAPEUTICS OF INFECTIOUS CONJUNCTIVITIS.*

By Dudley S. Reynolds, A.M., M.D., Louisville,
Professor of Ophthalmology, Otology, and Medical Jurisprudence in the Hospital College of Medicine, Medical Department of the Central University of Kentucky; Surgeon to the Eye and Ear Department of the Louisville City Hospital, the Gray Street Infirmary; Etc.

THE therapy of muco-purulent conjunctivitis comprises the frequent and thorough removal of the infecting matter by ablutions or irrigation, with such mild unirritating saline antiseptic fluids as will aid in the solution of the coagulated material, so sterilizing the surface of the membrane as to retard the growth of the micro-organism, and at the same time possessing soothing and unirratating properties. Now, since the terminal nerves in the surface of the conjunctiva are irritated by ablutions which do not contain chloride of sodium, it is manifestly clear this salt should constitute one of the ingredients of any solution to be employed for irrigation. Borate of sodium, in solution, containing a portion of the chloride, with enough carbolic acid to counteract by its anesthetic effect the mechanical irritation of the frequent and prolonged flowing of the stream from the irrigator over the surface of the membrane, constitutes an all-sufficient and rational plan of treatment. The long established and irrational practice of attempting to cut short infectious conjunctivitis by the application of caustics, may be accounted responsible for nearly all the disastrous sequelæ heretofore ascribed to all the varying forms of infectious conjunctivitis. Cases of muco-purulent conjunctivitis treated by caustic applications lead to entropion, symblepharon, cicatricial opacities of the cornea, more or less deep seated, and xerosis of both cornea and conjunctiva. In fact, all those deformities, cicatrizations, atrophies, sphacelations and staphylomas, formerly attributed to catarrhal and purulent ophthalmia, are but the natural results of the caustic treatment employed.

*Author's abstract of paper read to the Mississippi Valley Medical Association of Chicago, Ill., Oct. 6, 1899.

All the infectious or catarrhal types of conjunctivitis are retarded by alkaline lotions; all of them are intensified and greatly aggravated by stimulating astringents and caustic applications. The treatment by irrigation is the only rational mode of cleansing; it is easy of application; the means of applying it are universally accessible, and the results are all that could be desired.

In the white staphylococcus forms of infection, the irrigation may be done with normal salt solution, or with the following:

℞ Borate of sodium ..... ℥iij.
Chloride of sodium ..... ℥ss.
Water ..... gal. j.
Cryst. carbolic acid ..... gr. xv.

The frequency of the irrigation should be regulated by the accumulation of matter on the surface of the conjunctiva. The upper lid being everted, and the irrigating bag being hung twelve inches above the plane of the patient's eye, the nozzle of the irrigator may be held over the bridge of the patient's nose, and the fluid allowed to run over the everted lid and the inferior retrotarsal surface into a mass of absorbent cotton held on the temple. This should be repeated every half hour, and when the matter accumulates enough to exude between the lids, then this interval should be shortened by one-half. If no accumulation of matter appears, the interval may be increased, say, first to one hour, then two hours, and so on until there is no necessity for repetition of the irrigation.

In the gonorrheal type, the same plan may be pursued, but a more efficient irrigation may be made by dissolving three ounces of chloride of sodium, eight grains of bichloride of mercury, and one-half dram of carbolic acid in one gallon of water, which should be filtered before using. With this the eye may be irrigated every ten minutes from the very beginning of the attack, and if the treatment is commenced before corneal or conjunctival abrasions occur, it is well nigh certain they will not occur afterward. There is always some danger, in the case of infants especially, of injuring the cornea with the nurse's finger nails, and lest this accident should come from contact with the nozzle of the irrigator, great care should be taken never to allow the instrument to approach nearer than one inch. To perform the irrigation properly, two persons are required. First, having prepared the irrigation and placed the patient on his back, one person may evert the lid and hold a mass of absorbent cotton wool on the temple to catch the outcoming discharge, whilst the other person manipulates the irrigator alone.

The following is the programme of the St. Louis Medical Society of Missouri, Saturday Evening, October 14th, 1899: "Appendicitis from the Medical Standpoint," by Dr. I. N. Love.

Notes and Items

The following are the officers-elect of the Mississippi Valley Medical Association: President, H. N. Moyer, Chicago; First Vice-President, A. H. Cordier, Kansas City; Second Vice-President, J. P. Collings, Hot Springs; Secretary, H. E. Tulley, Louisville; Treasurer, Dudley S. Reynolds, Louisville.

One of the most interesting suggestions relating to the treatment of chronic constipation is that of a mechanical laxative. This is furnished by white liquid petrolatum, given in doses of two or three ounces. The claims made for this treatment are that the substance does not become rancid in the body, it is not decomposed, and in its effects it is essentially emolient, coating over and soothing the entire mucous membrane of the bowel. There is no distention and no increase in flatulance.

One of the most severe epidemics of poliomyelitis has recently terminated at Poughkeepsie, N. Y. About 150 cases occurred, only one of which proved fatal, and that seemed to be an extension of the disease to the membrane of the spinal cord, or possibly an ordinary case of cerebro-spinal meningitis. A study of this epidemic shows that no case was apparently due to direct contagion, though the probability of such a disease occurring in epidemic form, as this frequently does, being due to infection can hardly be questioned.

The Laboratory Committee of the Royal College of Surgeons have undertaken the standardization of antitoxic serums. Their examination will include the strength, as shown by the number of antitoxic units in each cubic centimeter; for an excess of antiseptics used in the preservation of serums, and also for the detection of micro-organisms. Serum may be sent to the laboratory in bulk, when it will be bottled after testing. In cases where the serum is bottled by the manufacturers, samples will be selected which will be examined, the results being certified and sent out under a special label.

An Italian observer has devised what may be termed a "drunk serum." It is prepared by feeding dogs upon progressively increasing doses of alcohol. The blood serum is then taken and used for immunizing other dogs. It is claimed that a dose of alcohol that would prove fatal is by this treatment successfully withstood. It is just possible that this discovery may yet have important effects in saving chronic drunkards. In those cases in which it is impossible to resist the craving for drink, or even in those in which it is simply desired to get on a debauch, all that will be necessary will be to take an injection of the serum, when moderate indulgences may be enjoyed with immunity from dangerous effects.

A Case is described in the St. Bartholomew Hospital reports of a boy aged eight years, who received a small dose of serum on the third day of a mild attack of diphtheria. The convalesence from the diphtheria was rapid, but on the ninth day after the injection there was itching of the skin and a blotchy erythema appeared on the legs and around the site of the injection in the right buttock. The eruption spread to the trunk, with slight general puffiness of the skin and severe pains in the limbs. There was enlargement of the glands below the jaw, with injection of the conjunctivæ and fauces. The temperature rose until the sixth day, reaching 103.6, after which it fell to normal, with a disappearance of the eruption.

A Strike of medical men is such an unusual thing that it is deserving of special notice. That the medical worm should have at last turned upon the inventors of club practice, insurance medical attendance, and other methods of beating the doctor out of his just dues was to be expected. The strike was brought about by the Colliery Surgeons' Association, and included all the members. The association includes some one hundred surgeons, who attend to the medical needs of some two or three thousand miners. One of the miners' clubs, known as the Wigan Society, had some differences with its attending medical men. The differences have grown out of the exceedingly low prices paid upon the accident cases, the amount being as low as 1s. 2d. The surgeons have offered to attend cases for 15 shillings per case, the fee to cover attendance for twelve months if necessary.

E. H. Small describes what is seemingly a family form of myxedema. The patient was twenty-eight years old at the time the trouble began. It was first observed in the legs, which increased in size; the skin became dry, thickened and scaly, with a marked increase in weight. At the time he came under observation the face was swollen, the lips broad and thick, nostrils broad and mouth enlarged, but no noticeable enlargement about the eyes. The lines of the face were nearly obliterated, and there was a dull expression. The legs and ankles were swollen and edematous, but there was no pitting on pressure. Memory was impaired and speech slow. The temperature was sub-normal and the urine was free from albumin. The thyroid body could not be made out. The mother of this patient died when sixty-three years of age, after having suffered for twenty-three years from a malady like the patient's. A sister is similarly afflicted, and a brother, now dead, had a like trouble, which was diagnosticated as chronic nephritis.

MEDICAL REVIEW

A WEEKLY JOURNAL OF MEDICINE AND SURGERY

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THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

The Chicago meeting of this rapidly growing and influential association passed into history as one of the most successful since its foundation, twenty-five years ago. More than one hundred of the local profession were enrolled upon its membership, which already included the bone and sinew of the profession of the valley of the great Father of Waters.

While the success of the association is largely due to the untiring work of its officers, past and present, there is another feature brought out by ex-president Dudley S. Reynolds, viz.: that it affords doctors whom accident or association has forced into a particular line of work an opportunity to meet upon the broad plane of medical brotherhood. May the good work go on until the association becomes coequal with that other great organization, whose function is somewhat different—the American Medical Association.

KOCH'S RECENT INVESTIGATIONS UPON MALARIA.

While Robert Koch with true scientific modesty acknowledges what has been done in the investigation of malarial diseases before he began his researches, only a prejudiced mind could deny that he has inaugurated a new era in this respect. The bitter criticisms published by young men who owe to him their scientific attainments—criticisms which we are sorry to say have been hurled with delight by some of our leading medical journals—fall flat when viewed in the clear, quiet light of Koch's recent publications.

As is well known, on the 25th of April of this year the Imperial German Commission, consisting of three members, of which Robert Koch was one, arrived in Grosseto, the capital of Tuscany, to undertake the study of malaria. The Italian government, as well as the municipal authorities of the town, where, be it remarked, malaria is endemic, did everything in their power to assist the commission in its labors. Summarized, the results are reported by Koch as follows: No case was considered malarial unless the parasite was demonstrated in the blood, and in no case of clinical malaria was the examination negative. Once the diagnosis was established, a careful attempt was made to determine if the case was a fresh one or if the patient was suffering from a secondary attack.

Up to almost the end of June nearly all of the cases examined were distinctly second attacks; but from this date on the fresh cases came in great numbers, so that in the five following weeks 205 fresh cases of malaria were studied. Koch concludes from this that there is no spring malarial fever in this part of Italy. For this region the months of July, August and September are undoubtedly the period of greatest morbidity. The importance of this is not to be overestimated, since the plasmodium can only live in the mosquito, and inasmuch as for a period of eight or nine months there are no mosquitoes, it follows that for this length of time the parasite is kept alive solely in the human body.

The commission made exhaustive examinations to determine whether the parasite could be demonstrated in the blood of any other animals, with invariably a negative result. The blood of several other animals contained parasites which in a greater or less degree resemble the plasmodium, but which could always be absolutely differentiated from it. The mosquito carries the infection, the human being carries the parasite to the time when the mosquito reappears. Consequently, if this vicious circle could be broken, a great step forward would be taken in ridding many countries of their endemic malaria.

Koch is of the opinion that in these countries malaria should be treated just as cholera, leprosy and the plague are treated in other countries; that is to say, its treatment should become a matter of state sanitation. In view of the fact that we possess in quinine a practical specific against malaria, he thinks that its intelligent use under proper state control would be productive of very beneficial results.

With regard to the varieties of malaria found, the quartan type was most rarely seen, 15 cases in 408; there were 202 cases of tertian and 191 cases of estivo-autumnal fever. The cases of estivo-autumnal fever show themselves absolutely identical with tropical malaria. All of the fresh cases of this variety began within forty-eight hours intermission, *i. e.*, in the tertian type. Later on, after quinine had been given or during the relapse, the tertian type could not be so distinctly made out.

It may be remarked that crescents were found in every case of estivo-autumnal type. The later in the summer that the cases were seen, the more they appeared to diverge from the classical picture. In the estivo-autumnal cases the quinine was always given in the intermission. These cases always ran a very

severe course at first, almost typhoidal in character. In these cases the first dose consisted of 30 grains each; later the dose was reduced to 15 grains per day. Quinine was used hypodermically only in cases where there was obstinate vomiting or in children.

The commission recommended that after the cure of these cases 15 grains of quinine be given every tenth day. Attempts to substitute urotropin or arsenic for the quinine showed the inferiority of these drugs for this purpose. Of the 408 cases treated none proved fatal. The commission also made exhaustive study of the varieties of the mosquitoes that they found in the dwellings of the infected areas, but the abstract of this report would take up too much space here.

We cannot refrain, however, from referring to another publication (*Zeitschrift für Hygiene, etc.*) in which Koch for the first time presents us with a pictorial illustration of the development and life of the malaria parasites. It does not detract from the value of the work of McCallum, Ross and Manson when we say that nothing clearer or more encouraging has as yet been published about this subject. We must mention also in this connection Koch's recent article on Hemoglobinuria (in the same journal), in which he brilliantly offsets the protests of so many English and American objectors against the theory of the quinine origin of most of the cases of this disease occurring in malarial districts.

CLIMATE FOR CONSUMPTIVES.

Volumes might be filled with the discussions of the kind of climate that is useful in tuberculosis, and exceedingly fine distinctions have been drawn as to what kind of climate was useful in particular varieties of the disease. The older writers spoke of the dry and moist forms of tuberculosis, the latter being recommended to go to a dry climate and the former being sent to the seashore or on a long sea voyage. These distinctions largely disappeared with the discovery of the bacilliary origin of the disease. There has been endless discussion as to the most suitable climate for consumptives, one place after another being exploited as a place where cure was almost certain to take place, only to give way to some other candidate for public favor. As a general rule, as civilization progressed from the East toward the West, each new territory was believed to be the ideal spot for consumptives, without much regard to meterologic conditions. The favorite spot for the residence of these patients has usually been on the confines of civilization, just where the conditions favor an out-of-door life, and hotels, clubs, and in-door amusements are conspicuous by their absence. At present, Southern California, while it is now a thoroughly civilized community, is perhaps the favorite place for consumptives, though its superiority is disputed by Colorado and the elevated table-lands of Central Georgia. In the light of our more exact knowledge of the pathology of tuberculosis and of its treatment, it has come to be believed that it is not the specific effect of any one climate, but rather the out-of-door life which these patients lead, that exercises the curative influence. Studied in this way, it is seen that an equable, dry, and not too cold climate, with freedom from severe winds, directly encourage an out-of-door life, and this is the chief value of climate. An experience with the treatment of consumptive patients, in different parts of the world, shows that, if suitably clothed, they rarely suffer from exposure, and even a blustery or damp climate is borne with ease if proper protection is afforded. Of course, exposure of this kind, and above all exercise, should be regulated with the greatest care, as the latter is often far from beneficial, particularly where the cases are at all active, or where there is even a moderate temperature. The latter type of cases are found to do well in the open air, provided they are properly protected. In the Adirondack sanitaria, patients who have a temperature, are often kept for hours out of doors, well wrapped in rugs and breathing the cold, dry air of mid-winter at a temperature of zero, or below. This seems to exert a markedly stimulating effect upon all the nutritive processes, and with this increased oxidation comes a better appetite, better assimilation of food, and thus the system is put in a better position to make a vigorous fight against the inroads of the disease.

MEDICAL LEGISLATION IN MICHIGAN.

Michigan has at last been given a new medical law, known as the Chandler Bill. The essential features of this law consist in the appointment of a State Board of Registration in Medicine, in the rigid exactions from those engaged in the practice of medicine in the State, and in the penalties enforcible for the non-compliance with the conditions of registration. The board is appointed by the Governor and consists of ten members, five of whom shall be from the regular school, two from the Homeopathic school, and one from the Physio-Medical school. These shall be appointed from a list of practitioners furnished by the incorporated State societies of each school. No member of said board shall belong to the faculty of any medical college or university, or shall be financially interested in the manufacture of drugs or the practice of pharmacy. It is the duty of the prosecuting attorneys of the respective counties to prosecute violations of the act. The use of the letters M. B. or M.D., or the titles Dr. or Doctor by any person, in a medical sense, shall be *prima facie* evidence of practicing medicine and surgery within the meaning of this act. No mention is made of so-called Christian Science, faith healing, etc., though the practice of osteopathy is exempted by the law passed in 1897.

Current Medical Literature

EYE, EAR, NOSE AND THROAT.

Acute Suppurative Processes in the Faucial Tonsils.—J. L. Goodale* reviews eight cases of acute amygdalitis, characterized by the pressure of intrafollicular abscesses, with regard to their main clinical and pathologic phenomena. These phenomena may be summarized thus: I. In cases with numerous intrafollicular foci of suppuration the streptococcus pyogenes was found to be more abundant than forms of staphylococci. II. The intratonsillar abscesses were found in two cases with and in six cases without circumtonsillar inflammation. III. The cases represented clinically a severe infection. They showed as a whole more disturbance than was present in twenty cases of simple proliferative amygdalitis observed by the writer. IV. The tonsils in most cases presented no clinical appearances that would enable one to determine the presence of the intrafollicular abscess. V. Histologic phenomena: 1. Suppurative foci were few in some tonsils, numerous in others, and varied in size. 2. The amount of fibrinous exudate was more marked than generally exists in the crypts in simple proliferative amygdalitis. 3. In the six cases, the interfollicular lymph channels and connective tissue spaces near the base of the tonsil contained few or no polynuclear neutrophiles. In the two cases, the connective tissue spaces and adjoining reticulum were crowded with polynuclear neutrophiles.

Injuries to the Eyes From Electric-Light Flash.—W. H. Fox† reports what he considers a typical case of such an injury. The patient was exposed to a blinding flash and an explosion, while working in a storage-battery plant. He was temporarily blinded, but continued at work. During the night he was awakened by intense pain in his eyes and was unable to open them on account of the pain and photophobia. Examination showed no marked injury to the face; eyelids slightly swollen, lids tightly closed. On opening the lids, both eyeballs showed intense hyperemia. The cornea of each was clear, and the pupils contracted to the size of a pin point. Vision roughly tested was normal, pain was intense and of a burning character, with the feeling as if foreign bodies were in the eyes. Under hot applications, 4 per cent. cocain instillations, and free use of boric acid, his eyes improved and he was fairly comfortable after one hour. Twelve hours later the pupils were enlarged under the action of cocain and the hyperemia was almost gone, only a few large conjunctival vessels remaining. On the following day the patient returned to his work. After a brief review of the literature on this class of injuries, the indications for treatment are considered. The hyperemia of the ciliary body, and iris and its accompanying pain and discomfort, must be relieved. These indications are best met by iced cloths applied to the lids and instillation of solution of atropia—one grain to two drams of water for the former, and cocain 4 per cent. and saturated solutions of boric acid for the latter condition. The injury is rarely or never permanent, and in the great majority of cases the effects last from twenty-four to forty-eight hours only. As to prevention, glasses to protect the eyes should be used. The best seem to be those composed of from four to six pieces of red and blue glass placed alternately.

*N. Y. Med. Jour., Oct. 7, 1899.
†Jour. Amer. Med. Assn., Oct. 7, 1899.

Tonsillar and Circumtonsillar Abscess.—G. A. Leland* advocates the use of the index finger in making observations in cases of tonsillar and circumtonsillar suppuration. Exploration with the finger seems to show the circumtonsillar inflammation most frequently starts from within the tonsil and is an extension of the suppurative process in the direction of least resistance. By the use of the finger tip after the tonsil has been split by the knife, the enlarged and distended crypt can be frequently made out and the sinus followed into the circumtonsillar cavity. In finding the pocket of pus by this method, there is no danger of injuring the blood-vessels. Another advantage is that it drains the abscess from the bottom, since the cavity is torn open after the finger reaches the end of the cavity. In addition, very quick recovery follows, the evacuation of pus being complete at once. The method is thorough, can be made painless under slight anesthesia, the opening is made through diseased tissue, the pus track and cavity can be found earlier than by the old methods, and much time and suffering are saved.

Relation of the Nasal and Accessory Cavities and Dental Lesions.—D. B. Kyle.† Whatever the cause, obstruction to nasal breathing in children and irregularity in development of the accessory cavities are usually found associated. Irruption of the teeth into the nose or antrum, or diseased teeth affecting either cavity, may be etiologic factors in many cases hitherto obscure. The most important causes to be corrected in early life are deflection of the septum and enlargement of the pharyngeal tonsil. Irregularly placed teeth usually show a precedent nasal obstruction. Thumb-sucking causes a characteristic alteration in the superior maxilla and floor of the nose. Irregularities of the septum, especially spurs or ridges low down, are the nasal lesions most likely to affect the teeth. Irregularities in the formation of the accessory cavities will cause irregularity in the upper arch, and predispose to dental lesions as well as to nasal disease. In ozena, the odor may come from a diseased tooth causing accumulation of gas into the

*N. Y. Med. Jour., Oct. 7, 1899.
†Jour. Amer. Med. Assn., Oct. 7, 1899.

antrum, with consequent escape into the nasal cavity, to which latter source the whole of the trouble is wrongly attributed. The symptoms in this condition vary, depending on the degree of occlusion of the antral opening. There is usually a sense of intranasal pressure, increasing in intensity, dull pressure-pain, heavy sickening headache, increased by stooping forward. Percussion over the antrum may give variation in resonance. The systemic phenomena of the presence of pus are usually absent.

Value of Muscle Training in Treatment of Vocal Defects.—G. H. MAKUEN.* The direct cause of vocal defects is always a faulty musculation in the vocal mechanism. The extrinsic muscles of the larynx may be brought under direct control of the will and the intrinsic muscles may be controlled to some extent indirectly by means of voluntary extrinsic effort. This volitional control should be abandoned as soon as its object, nervimuscular development and harmony of nervimuscular action, has been accomplished. There will follow a speedy return to the normal automatic action, with all the machinery of voice in a much improved, if not quite perfect, condition. For the cases that come under the physician's observation, it is necessary to be able to determine on what condition of the larynx the vocal defect must depend, and what faulty extrinsic muscular action can bring about this condition. The following are some of the muscles that have been found to be defective in action and subject to training by this method: The omohyoid, sternohyoid, sternothyroid—all depressor muscles; and the palatopharyngei, stylopharyngei, digastric, stylohyoid, geniohyoid and the hyoglossus—all levator muscles. These may be brought under direct control of the will either collectively or in pairs.

An Unobserved Ocular Symptom of the Frog.—ABELSDORFF.† If the frog be subjected to extremely low temperatures the pupil of the eye becomes first light-gray, and finally milk-white in color. Upon being subjected again to warmth the pupil returns to its normal color, viz., black. This change of color of the pupil is due to the formation of a cortical cataract through freezing. The application of cold to the intact or enucleated eye readily produces a cloudiness of the lens. It is quite possible that all hibernating animals present this phenomenon during their long sleep.

GYNECOLOGY AND OBSTETRICS.

Etiology of Eclampsia—REID‡ claims that all phenomena in connection with the brain, kidneys and urine, to which etiologic importance has been attributed, are not to be regarded as causative factors, but only as results. According to Reid, the toxic material causing eclampsia is produced in either the uterus or placenta, or both conjoined. This toxin causes an hypertrophy of the thyroid gland, in which a secretion is formed counteracting the toxic effect of this poison. In a large number of cases examined, in which for some reason the thyroid gland was not of pregnancy, the kidney of pregnancy was absolutely demonstrated.

A Case of Extra-Uterine Fibroid; Abdominal Section; Recovery.—BOROKER.* The patient noticed, a month after she had been pregnant, a lump in the left grain, which gradually rose higher and higher, until at the sixth month of pregnancy, when the author saw the case, the tumor had reached the size of an orange and was situated in the mid-line of the hypogastric region. Patient at this time was suffering from severe pains, which could not be relieved by medicinal treatment. The tumor was removed the following day and the patient went on well without any interruption for two days, when labor pains set in. Child was delivered by forceps. Patient made a rapid and complete recovery.

Ten Cases of Cesarian Section, With Sagittal Fundal Incision.—E. WEBER† reports ten cases operated upon at Berne, after the above method. But one case terminated fatally, and that one as a result of ileus. Bleeding from the uterus was troublesome in but one case; here it commenced one-half hour after the operation, but was stopped by a tampon. The author lays stress on the sutures grasping the endometrium. In four cases the temperature rose after operation. One-half of the children were in partial asphyxia, while two died. Weber recommends only the fundal incision, claiming, however, that it makes no difference whether the same be made in the sagittal or in the transverse direction, as done by Fritsch, in Bonn.

Eclampsia Complicated by a Marked Erythema Multiforme.—J. D. VOORHEES.‡ A case, with many points of interest: 1. It was a case of eclampsia in which the urine was excreted in large quantities, of low specific gravity and with little albumin. The condition is a toxemia when other organs than the kidneys are at fault; the woman was afterwards jaundiced, and it was assumed that the liver must have produced the toxins, or it failed to excrete the toxins, or it must have been affected by the toxins which caused the convulsions. 2. The case also indicates that if a woman has had but one eclamptic seizure we must give a guarded prognosis. Even if the uterus is empty, if the kidneys are active, if the pulse is slow and there is no pyrexia, even if the coma is transient, the outcome is not always recovery. 3. Morphine, chloroform and hot-packs must be given

*Jour. Amer. Med. Assn., Oct. 7, 1899.
†Centralblatt für Physiologie, May 13, 1899.
‡Medicine, October, 1899.

*Lancet, Sept 9, 1899.
†Centralblatt für Gynäkologie, Sept. 9, 1899.
‡N. Y. Med. Rec., Oct. 7, 1899.

with care and judgment. Convulsions will occur even when these drugs are given in fairly large doses, and any unfavorable indications require immediate cessation of such remedies. 4. The skin lesion, erythema multiforme, in a bullous form is very rare. As to its etiology, perhaps the liver in its resolution elaborated a toxin which affected the skin.

A Case of Retention of Urine Caused by Retained Menstrual Fluid.—Smithson* reports the case of a girl, aged 16 years, who was unable to pass urine and was in great pain. The catheter was passed and a large quantity of urine was drawn off, which relieved the pain at once. While passing the catheter a tense, fluctuating swelling projecting between the labia was felt. The symptoms returned shortly afterwards and necessitated the use of the catheter at regular intervals. Upon a more careful examination the swelling previously referred to was found to be an imperforate hymen, bulging forward between the labia. This was incised and a large quantity of menstrual fluid, of very dark color and extremely viscid in character, was removed. After this there was no further trouble. The retention was evidently due to great pressure of the menstrual fluid.

INTERNAL MEDICINE.

Further Report on the Use of "Antiphthisis Serum, T. R." (Fisch), in Tuberculosis.—A. M. Holmes† supplements a former report on serum therapy and gives a summary of cases treated, and makes a few general deductions. He divides the patients into two groups: those in the first class were in the earliest incipient stage, and no bacilli could be found in the expectoration; those in the second class had advanced to the stage of expectoration with bacilli present. Without a single exception, the patients of the first class, nineteen in number, made rapid improvement under the serum treatment. The second class embraces thirty-one cases, of which eleven were in the incipient stage and twenty were advanced cases. Of the eleven, four were cured, bacilli disappearing completely; five made distinct improvement, and two are still under treatment. Of the twenty advanced cases, four made distinct improvement, seven improved slightly but subsequently failed, three made no improvement, and six died. Many of the cases were under the serum treatment but a short time; the best effects may be expected only after extended use of the serum. In about all advanced cases the benefit has been slight, but life has possibly been prolonged. The only hope lies in our ability to recognize the characteristic symptoms which exist before the disease becomes established. The tuberculin test serves as a safe and positive means of diagnosis when bacilli are not found in the sputum or excreta, and also serves as a reliable means of estimating the degree of convalescence. The blood count bas been found a greater aid to diagnosis in doubtful cases than the study of the sputum. In cases experiencing good effects of the serum, there is invariably an increase in the percentage of young lymphocytes in the blood. In rapidly declining tuberculous cases there is a progressive decrease in the percentage of these lymphocytes. The tuberculin test should be used in all suspicious cases in which bacilli cannot be found, before beginning treatment.

*Lancet, Sept. 9, 1899.
†Jour. Am. M. A., Oct. 7, 1899.

Empyema Sacculated Between the Heart and the Lung.—W. S. Dodd.* The patient was operated upon for empyema on the left side, and 250 grams of pus evacuated. Temperature fell to normal, but the symptoms returned the next day and persisted. Careful search to locate another collection of pus was made. At autopsy an encapsulated abscess was found between the pericardium and lung; this was covered by lung and was in relation to the anterior wall of the chest only in the fourth intercostal space from the mammary line for about 3 cm. toward the sternum, but the pericardium was directly under part of this. A needle in the fourth intercostal space 1 cm. internal to the mammary line would probably have found the abscess without entering the pericardium and infecting it. At the end of the fifth rib, corresponding to a point of tenderness complained of for some time, the bone tissue was found broken down and necrotic. No communication could be found with the abscess at this point nor was there any communication between the abscess and even the smallest bronchi. Its walls were thick and tough.

The Proper Place for Proprietaries.—J. E. Beery† believes that proprietary medicines are in existence to-day, and are used many times to the exclusion of the old remedies, because the medical profession wants it so. Very few of these remedies become famous if not endorsed by the medical profession. Some of the preparations are of great value, and the extent to which they are prescribed will depend on each physician, varying with his individual education and judgment.

Purpura Rheumatica.—W. L. Johnson‡ briefly discusses the causes of purpura, which he recapitulates as: 1. Mechanical, including nervous, from vasomotor derangements causing changes in blood pressure. 2. Toxic in general, as drugs, toxins, and organic matter. 3. Purpuric disease, specific and communicable. Two cases are reported, which come under the head of purpura rheumatica. One case occurred in a boy, six months' old; the left knee was swollen and painful. Salicylates and quinine were found of no value; antipyrin in one-grain doses four

*N. Y. Med. Rec., Oct. 7, 1899.
†Jour. Am. M. A., Oct. 7, 1890.
‡N. Y. Med. Jour., Oct. 7, 1899.

times daily reduced the fever and calmed the child. The second case, a woman of 55 years, was relieved after two months' ineffectual treatment with the usual remedies, by the administration of the glycerinophosphate of calcium. Within a week after giving four grains of Merck's salt three times daily the patient was up, and one week later all petechiæ had disappeared.

A Tack in the Lung for Seven Years.—A. v. Jova.* A man, 17 years old, complained of having had a severe cough for seven years. For some weeks it had been worse, with profuse and fetid expectoration, and a slight hemorrhage. There was exaggerated respiratory murmur over the entire left lung, with slight roughness. On the right side, in the lower part over the back and side, percussion was dull, and there was almost a complete absence of respiratory murmur. There was fever, rapid pulse and respiration, which continued for four days, when the patient coughed up a hard substance, surrounded by thick mucus of a dark color. This proved to be a tack, seven-eighths of an inch in length, well preserved, except that it was covered with rust. The symptoms began to abate at once, and in two weeks the patient had only a slight cough. While playing the patient had swallowed a tack when ten years old. He had experienced a slight choking sensation at the time, but it soon passed away. He had coughed ever since, and was said to have bronchitis.

Treatment of the Abdominal Viscera Through the Colon.—F. B. Turck† briefly calls attention to these methods of treatment through the colon: 1. Hydrotherapy. 2. Hot and cold air in treatment. 3. Mechanic or massage treatment. 4. Electricity. 5. Medication per colon. 6. Dietetics. From experiments the writer has shown: 1. That marked congestion of the abdominal viscera is not promptly reduced until the temperature of the introduced water has reached a temperature of 55° C. 2. That the blood pressure is raised, and the heart slowed at first, but after prolonged irrigation with hot water the blood pressure is lowered and there is a marked rise in the body temperature. 3. That by subsequent use of ice-water, the heart-beat, respiration, blood-pressure, and the body temperature, are again restored to normal conditions. 4. That water at 55° C., retained only one minute, and the injection repeated, does not damage the mucous membrane of the colon, as far as could be observed. The following points were also noted, viz.: effect on heart and circulation; changes produced in the blood, (a) the number of red corpuscles before and after each treatment; (b) the leucocytes; (c) comparisons regarding these points before and after daily treatments, continued for two or three weeks; the effect on the temperature, mouth, skin and stomach; the effect on the gastro-intestinal tract; the effect on the kidneys; the effect on the liver, on the general metabolism, on the pelvic organs, and on elimination and auto-intoxication. Each of these is briefly detailed. From the effects produced by colonic lavage on the gastro-intestinal tract, on the liver, kidney and skin, it is clear that the result of treatment must be valuable in various forms of auto-intoxication, with an improvement in the general and local circulation. The result in turn effects an increased leucocytosis, and this gives another powerful aid in combating various forms of sepsis and auto-intoxication.

Adeno-Carcinoma Complicating Pernicious Anemia.—Krokiewicz* reports a case of pernicious anemia with an absolutely characteristic blood find, which ran the ordinary course with rapidly fatal termination. The post-mortem showed, in addition of the find characteristic of this condition, an adeno-carcinoma of the stomach with involvement of the mesenteric glands. Intra vitam there had been no gastric symptoms. The point of interest about the case is the determination as to whether the anemia was really a primary essential pernicious anemia, or whether it was secondary to the carcinoma. Basing his opinion (a) upon the pathognomonic blood find, (b) upon the absence of gastric symptoms of any sort, the author concludes that he had to do with two independent processes.

The Primary Lesions of Tuberculosis; How Located.—W. H. Weaver† believes that it may be stated: 1. That the infection comes through food or moist germs inhaled and swallowed, and possibly through infection of tonsillar tissue. 2. In the great majority of cases the infection occurs in the posterior portion of the lung apex, that being the most vulnerable point, as a direct result of the discharge of infected chyle into the vena cava. 3. Should that portion of the lung apex be healthy, and not a suitable nidus for germs, they may pass on with the current of blood to find lodgment in some other area, unless the blood has exerted its bactericidal power over them, when they may be removed by the action of the phagocytes.

Arsenic as an External Irritant.—Roberts‡ reports the case of a gardener who called upon him with an erythematous redness and considerable puffiness of both legs and feet nearly as high as the knee. Also complained of sickness and diarrhea, and his tongue was covered with a slimy yellow fur. Recovered upon simple treatment. A month later he again came with the same condition, only in a more aggravated form. It was found that he had been using a weed-killer, and for several days before each attack

*N. Y. Med. Rec., Oct. 7, 1899.
†Jour. Am. M. A., Oct. 7, 1899.

*Wiener klinischer Wochenschrift, Sept. 14, 1899.
†N. Y. Med. Jour., Oct. 7, 1899.
‡Lancet, Sept. 9, 1899.

his boots and trousers had been thoroughly saturated with it. Analysis of this weed-killer showed it to contain a large quantity of arsenic.

The Pulsatory Hand and Foot Phenomena.—W. Moser.* In placing the palmar surface of the two hands together, as in the attitude of prayer, and making slight pressure with each finger tip, a visible pulsation, capillary in origin, is not only felt, but seen, in most individuals. This phenomenon possesses some practical or diagnostic significance, and notably is that the case in aortic regurgitation, in which sphygmographic tracings will show a much higher ascent than normal. By studying a number of normal cases first, and then abnormal, this sign will prove of diagnostic and probably prognostic value. The central point of origin of the phenomenon is the heart, and disease of this organ, or a rapid and forcible heart, will increase or render more visible these pulsatory phenomena. It is a good index of the heart, and may prove of special service to those who are not well acquainted with the auscultatory phenomenon.

NERVOUS AND MENTAL DISEASES.

Concerning a Peculiar Condition of Post-Hypnotic Stupor.—H. Higier† describes a peculiar psychical condition, which he has had the opportunity of observing in a number of hypnotized individuals immediately after awakening from the hypnotic sleep. This condition was never suggested nor could it be caused by the aid of a third person. The author, at first, was inclined to believe that the condition was a simulated or exaggerated one, but after repeated observations, on individuals under different conditions, he was impressed with the resemblance to the condition of stupor (Dämmer Zustand) of the alienists. The condition may be described as a modified stupor, in which the patient's mind is only partially active. He responds to questions, but answers often in a foolish and illogical manner. After a short interval the patient becomes mentally normal again; and he does not remember anything of the post-hypnotic condition. The short time of this condition makes it seem analagous to a brief attack of stupor called the psychosis of Gauser.

Note Upon the Mode of Partial Obliteration of the Embryonic Ependymal Canal in Mammals.—C. Bonne‡ studied this question by examining the spinal cords of the embryos of various animals. Special attention was given to the study of the sacral and caudal regions. The Golgi method of staining was used. His conclusions are as follows: 1. The canal of tbe ependyma is closed posteriorly by invagination of its posterior portion, which at first is elongated in a transverse plane, and presses more and more into the cavity. 2. There is then a veritable solution of continuity of the epithelial border, an interruption which can be shown by the Golgi method, and which takes place before the invagination proper, and which only becomes accentuated by the increase of the invaginated tissue. 3. To this invagination may be added: (a) The presence, at a point which later becomes the extremities of the posterior horns, of some cells which in the beginning are inferior ependymal, forming by their development the gelatinous substance of Rolando, while those which surround the central canal permanently, form the gelatinous peri-ependymal substance; (b) the formation of the posterior septum, which according to its region and the period of development shows itself enclosed by the lateral divisions of the canal, as yet elongated from before, backwards, or free upon its whole extent, spread out in the midst of the grey substance and between the columns of Goll. It separates posteriorly the neuroglia cells, the direction of which are perpendicular to its own, and which arise from the lateral divisions by a progressive amalgamation; (c) the presence of neuroglia cells which have immigrated into the most posterior part of the cord, from each side of the septum. 4. External to this invagination, and by connective but independent process, the lateral divisions of the ependyma approach one another, and thus can enclose a segment more or less extended and more or less distant from the invaginated corner and from the cells of the posterior septum. 5. The rhomboidal sinus of birds and probably also the terminal sinus, or preterminal dilatations of the ependymal canal of mammals, depend upon a process different in details, but essentially comparable, to that of the formation of the rest of the canal, a process which can be somewhat explained by teratology.

The Choroid Plexuses of the Lateral Ventricles of the Brain; Their Histology, Normal and Pathologic (in Relation Especially to Insanity.)—J. W. Findlay* makes a study of the choroid plexuses, based upon the examination of sixty-five cases, forty-nine of which were insane. The normal structures were also studied in fresh brains of the sheep, ox and calf. The author believes with Robertson, that the choroid plexus is of the same structure as the pia-arachnoid, covering the surface of the brain and resembling a spongy "lymph sac." There is also a small quantity of elastic tissue in the form of fine threads or filaments in the vessels of the choroid plexus, arteries, veins and capillaries-villi. The free surfaces of the villi and of the depressions between them is everywhere covered by an epithelium. The individual cells vary in size, ranging from .01 to .015 mm. They are irregularly rounded or polygonal in

*N. Y. Med. Rec., Oct. 7, 1899.
†Neurologisches Centralblatt, September 15, 1899.
‡Revue Neurologique, Sept. 15, 1899.
*Brain, Summer No., 1899.

shape. They fit closely by means of delicate processes which interlock between neighboring cells. Although a nerve plexus has been demonstrated in the pia mater and in the choroid plexus of the fourth ventricle, it might be expected that they would be found in the choroid plexuses of the lateral ventricles, but none have been described. Medullated nerve fibres do exist here, however, though they are present in small numbers. It seems probable that these are vaso-motor nerves destined for the blood vessels. The pathology of the choroid plexus: (a) Concentric bodies are never found in such profusion in the mentally sound as in the insane. (b) Mulberry bodies are closely allied to the concentric bodies. (c) Cystic degeneration of the choroid plexus is a very common condition, being found in a large proportion of cases. (d) Thickening of the trabeculæ, with proliferation and degeneration of the endothelial cells. (e) Hyaline fibroid changes in the vessels.

Cases of Hemiatrophia Linguæ.—E. WIERSMA* describes six cases of hemiatrophia linguæ, some of peripheral and some of central origin. A half-sided atrophy of the tongue can originate as a result of a lesion of the hypoglossus extra, or intra-cranial, or in its centre, in the medulla oblongata. An atrophy which is not distributed equally over the whole half of the tongue speaks more in favor of a bulbar lesion than for a peripheral. Koch and Mariè, in their study of cases, have agreed that a paralysis of the soft palate and of the vocal cord, on the same side, occurs in all cases where the paralysis is due to a bulbar lesion. They think that this may be taken as a diagnostic point. The explanation of this connection is the proximity of the nucleus of the hypoglossus, the vagus and accessorius in the medulla. In the second case the cause of the atrophy is syringomyelia. Such cases have often been reported. In case three, a fibro-sarcoma, involving the medulla and the pons, is the cause. In case four, a swollen lymph gland, which became purulent and pressed upon the hypoglossus, caused the paralysis. In case five the lesion is peripheral. In case six the seat of the lesion is undetermined.

SURGERY.

On Some Important Points Regarding Perfection of Asepsis.—C. BECK† formulates his views in the following maxims: 1. The superficial surface of the skin of the patient and of the surgeon's hands is sterilized. The atmosphere being innocuous, all inorganic material being made aseptic by boiling, the skin surface being asepticized, and the skin glands which contain bacteria being *hors de combat*, it becomes evident that the only source of infection remaining would be the rough manipulations on the part of the surgeon or his assistants. 2. Aseptic gloves are worn by the operating surgeon at least during the skin incision. The assistant who passes the instruments, and who attends to the wound itself, wears gloves throughout the whole operation. 3. After incision the wound margins of the skin are covered with sterile napkins, which are fastened to the wound surface underneath the skin margins with miniature forceps. 4. The knife used for the skin incision must not be used for further incisions. The operation should be performed as rapidly as possible. 5. For uniting the wound margins of the skin the subcutaneous method should be preferred. 6. Forcible manipulations, especially blunt operating, should be avoided. 7. The surgeon and assistants wear sterilized gowns or suits; their heads must be covered with sterilized caps. 8. Long beards are entirely unsurgical. 9. If a surgeon should suffer from rhinitis, tonsillitis, etc., he should use the most minute local precautions or omit operating till recovery.

Emergency Surgery.—R. C. DUGAN* describes an emergency satchel and the method of preparation of the towels, bandages and dressings it should contain. All accidental wounds should be treated as septic wounds, and are often best treated with moist dressings. After a crushing injury the parts should be scrubbed as clean as possible; if flaps are made, sutures should be placed without tying and the wound packed with moist boric gauze, a moist boric dressing outside covered with rubber protective, the patient given a boric acid solution, with directions to keep the dressing moist through a hole in the protective. In a few days the dressing may be removed and the sutures tied with good clean union. Wounds already suppurating may be treated in the same manner with moist dressing. If deep and requiring packing, gauze packs dipped in balsam of Peru and castor oil quickly check suppuration and stimulate granulation, so that in a short time the packing may be left out and closure allowed. In wounds which do not need wet dressing but require drainage, folded rubber tissue of McBurney is preferred to tubes, as it does not necessitate removal so early and does not leave so much scar tissue as when tubes are used.

The Success of Operative Treatment in Facial Disfigurement.—J. B. ROBERTS.† The certainty of rapid union with little scarring, and the freedom from septic fever, obtained by aseptic surgery, have within the last twenty years greatly extended the number and variety of operations performed for cosmetic reasons alone. The success of skin grafting, bone grafting, and the insertion of foreign bodies as supports and representatives of the tissues, have given opportunity for original work of a high order in plastic surgery. The lesions vary greatly in character and

*Neurologisches Centralblatt, Sept. 15, 1899.
†N. Y. Med. Rec., Oct. 7, 1899.

*Jour. Am. M. A., Oct. 7, 1899.
†Phila. Med. Jour., Oct. 7, 1899.

extent, and satisfactory results depend much on the effect the change in contour has upon the eyes of the observer. The newly constructed or altered feature must so conform to the rest of the face as to escape critical attention, or else it must serve to direct attention to other parts of the patient's countenance. A few of the operations are mentioned which are employed in remedying deformaties of the face and ears. The congenital and acquired deformities of the mouth, nose and eyes should be corrected often, not only for cosmetic reasons, but because their correction at the same time improves the health. Mention is made of the fact that the wearing of glasses may sometimes render ocular condition less conspicuous; a blind or sunken eyeball may be made to look equal in size to its companion by having a convex lens worn in front of it, with a piece of plain glass before the other normal eye.

A New Method of Reducing Old Dislocations of the Lower Jaw.—T. A. McGraw* reports a new method by means of which he was enabled to reduce a dislocation of the jaw which had existed for five months. A strong steel hook was made, with a short prong bent in such a way as to run parallel to and near to the shaft. The space between the prong of the hook and its shaft was just wide enough to permit the hook to pass over and grasp the jaw at the sigmoid fossa. The plan consisted in making incisions under each zygoma, separating the fibres of the masseter, passing the hook through in front of the condyle on each side and over the bone at the sigmoid notch, and then pulling downward and backward until the condyle was disengaged and slipped into place. A T-shaped incision was made first below the right zygomatic arch and the hook passed through the masseter by separating the fibres, and fastened over the bone in front of the condyle. Pieces of cork were inserted between the molars as far back as possible, and an assistant pulled the chin forward and upward with all his force, while traction was made on the hook. After fifteen minutes, the jaw yielded slightly, but could not be restored to its proper place until the procedure was repeated on the left side. The jaw was kept bandaged for two weeks, gradually settling into its normal position. Reference is made to the literature of the subject.

Subscapular Aneurysm of the Aorta.—A case in which M. Crevelli† operated is described as follows: The patient, a male, had suffered for years with indistinct pains over the left thorax, shoulder and side of neck. Despite the fact that he had visited many surgeons the correct diagnosis had not been made. Feeling a sensitive pulsating tumor at the posterior scapular border, Crévelli, at the patient's request, incised the same and found occupying the subscapular fossa an immense aneurysmal sack, which had eroded the fourth, fifth and sixth ribs. The patient succumbed four days later, and at the autopsy the sack above mentioned was found to communicate with one of equal size within the thorax. This latter tumor originated in the posterior aspect of the aorta.

*N. Y. Med. Rec., Oct. 7, 1899.
†Revue de Chirurgie, July, 1899.

The Teschner Method in Scoliosis.—L. Erich* describes five cases of scoliosis treated by the system of physical exercise which was originated by Dr. Teschner. It is founded on the belief that the want of equilibrium of the muscles on either side of the spinal column in scoliosis is caused by a weakened or rudimentary condition, not only of the muscles of the back and of the muscular system in general, and that to benefit such patients it is therefore necessary that the muscles of the entire body should be developed, educated and strengthened to the fullest extent. An accurate description of the method used by Teschner is given, and this was followed in every respect, excepting the patients did not use the heaviest weights, were not required to lift more at each succeeding treatment, and were not permitted to lift an amount which caused discomfort. As a result the improvement is slower, but the final result is quite as good, with the advantage of never causing discomfort and not overworking the patient's heart. Photographs of the cases, both before and after treatment, illustrate the improvement.

The Surgical Treatment of Gall-Stones.—F. C. Ferguson† regards cholelithiasis as a purely surgical disease, and believes that it should be taken out of the category of general medicine. For the relief of this condition he considers three operations: 1. Cholecystotomy, which consists of making an incision through the abdominal walls over the site of the gall-bladder, opening it, extracting the calculi and establishing an external biliary fistula. 2. Cholecystectomy, or incision of the gall-bladder, which may be resorted to in cancer, when we believe we can remove all the diseased tissue. 3. Cholecystenterostomy, which consists in uniting the gall-bladder to the intestine in such a way as to make a fistulous opening between the two. The operation of selection depends somewhat upon the pathologic conditions found on opening the abdomen. If the gall-bladder be found so extensively diseased or so atrophied that its attachment to the colon or duodenum is impracticable, cholecystotomy or cholecystectomy should be done. One such case is reported in illustration. In all other cases cholecystenterostomy is the ideal operation: first, because drainage is made into the intestinal canal, instead of externally: second, convalescence is much more rapid; third, the patient is permanently cured. Five cases are reported.

*N. Y. Med. Jour., Oct. 7, 1899.
†N. Y. Med. Rec., Oct. 7, 1899.

Practical Therapeutics.

On "Electro-Thermic" Compresses.—E. LINDEMANN* describes an apparatus for making electrically-heated compresses, which can be used where hot compresses are indicated. For the softening and absorption of hard exudates, infiltration, local stasis; also as a sedative and antispasmodic in cases of painful conditions of contraction, etc. The advantages of the author's "electro-therm," a picture of which appears in the article, are that any desired temperature can be obtained and kept for any length of time, the comfortable and clean method of application, the soft character of the compresses, and the possibility of beginning with a low temperature and gradually increasing to any desired degree.

The Treatment of Gonorrheal Cystitis. — Whether this infection once thoroughly seated in the male bladder can ever be eradicated is a question. Even in the case of females, the difficulty of dealing with the affection is very great, chiefly due to the fact that, like in the urethra and other mucous surfaces, the infecting agent is not upon the surface of the mucous membrane, but insinuates itself within the follicles underneath the surface epithelium, and perhaps even deeper in the tissues. Wertheim, at the meeting of the Gynecological Society at Berlin, showed a case of gonorrheal cystitis in which the capilliaries and veins were filled with gonococci, a condition of gonorrheal thrombosis. A specimen was taken from a patient who had suffered from vulvular vaginitis, with secondary inflammation of the bladder. There was present in the case inflammation of both joints, showing that when gonococci once escape into the vessels, joint complications and abscesses are almost inevitable. Or course, local treatment would afford no relief in a case such as is described by Wertheim, but, fortunately, it is rare that this infection penetrates as deeply as was found in his case. Theoretically, relief should be obtained in this condition from the use of the newer silver salts, among the best of which is protargol. The later improved preparations of this salt contain from eight to ten per cent. of silver, and undoubtedly it is an antiseptic of great value. It seems to have special power in inhibiting the growth of the gonococcus, and while in stronger solutions it is not devoid of local irritating properties, it may be used in sufficient strength to be effective without destroying the vesicle mucous membrane. It should be given at first in solutions of one-fourth to one-half per cent., which are increased to 1 and 1½ per cent., according to the tolerance of the particular case. So far as possible, the organism should be identified, as there are other germs than the gonococcus that cause a persistent cystitis, and which are more readily and quickly relieved by other remedies than the silver salt. Picot uses as a vesicle injection in cases of gonorrheal cystitis the following:

℞ Guaiacol ..... 5 parts
Iodoform ..... 1 "
Sterilized olive oil ..... 100 "

Of this mixture ten to twenty drops is injected into the previously-cleansed bladder twice each day.

*Berl. klin. Woch., Sept. 18, 1899.

Concerning Rheumacilate.—According to Lacorde, salicylic acid and its derivations may be regarded equal in their specific action in rheumatism to mercury in syphilis. Many authorities concur in the opinion that the rational method of treating syphilis with mercury is by inunction. It is equally true that the tolerance of the salicylates is raised to its highest possible point by the local or topical application of these medicaments. Prof. Catrin says of rheumacilate (a chemically pure salicylate of methyl): "Its usefulness in relieving the pain of articular rheumatism is incontestable." Rheumacilate, when applied externally, is absorbed freely, and in sufficient quantity to obtain the benefit of the internal salicylic treatment, but which does not disturb the digestive tract or cause local cutaneous irritation. It is approved by the highest authorities in this country and Europe. That rapid relief follows the external administration of this valuable remedy is evident by the annexed communication. Dr. F. G. Domnitz claims that rheumacilate is a specific in gout and rheumatism.

Congested Mammary Glands.—Dr. W. B. MANN recently had a patient with a very aggravated case of congested mammary glands, who suffered excruciatingly, the breast being nearly double its natural size. And although his usual remedy in such cases, viz., camphorated castor oil, was fairly effective, yet he concluded to give unguentine a trial; most gratifying results followed in less than one-half the time.

Uric Diathesis.—Dr. C. H. SPRINGER gave to a man with frequency of micturition, pain in back, and bloating of stomach and bowels; with rheumatic pains in limbs; sleepless and nervous; with full feeling and eructations after meals, lithiated hydrangea (Lambert's), in doses of two teaspoonfuls after meals, and the following:

℞ Potassi bromida ..... ʒ iij.
Extr. cas. sag. fl ..... f ʒ iss.
Vin. kola ..... f ʒ ij.
Tinct. cinchon. co ..... q.s. ft. f ʒ iv.
M. S. — One teaspoonful, in water, before meals, and two teaspoonfuls before retiring.

He improved as if by magic; bloating, full feeling, eructations and all pain disappeared; sleeps well, and there is no undue frequency of micturition.